PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2G/2BL10/MT-24p	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/NL2004/000823	International filing date *(day/month/year)* 26.11.2004	Priority date *(day/month/year)* 26.11.2003
International Patent Classification (IPC) or national classification and IPC INV. B65G67/20		
Applicant MEIJER, Sjoerd		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 11 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 6 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☒ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the report
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☒ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☒ Box No. VII Certain defects in the international application
   - ☒ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
23.09.2005	23.05.2006
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer: Uhlig, R Telephone No. +49 89 2399-7083

Form PCT/IPEA/409 (Cover Sheet) (April 2005)

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3(a) and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4(a))
   - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
2-80	as originally filed
1, 1a	received on 29.09.2005 with letter of 23.09.2005
Claims, Numbers	
1-26	received on 23.09.2005 with letter of 23.09.2005
Drawings, Sheets	
1/16-16/16	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☒ the claims, Nos. 1-24
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has, within the applicable time limit:
   - ☐ restricted the claims.
   - ☐ paid additional fees.
   - ☐ paid additional fees under protest and, where applicable, the protest fee.
   - ☐ paid additional fees under protest but the applicable protest fee was not paid.
   - ☐ neither restricted the claims nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
   - ☐ complied with.
   - ☒ not complied with for the following reasons:

     see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
   - ☒ all parts.
   - ☐ the parts relating to claims Nos. .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	6, 8, 12-16, 20, 22, 25, 26
	No:	Claims	1-5, 7, 9-11, 19, 21, 23-25
Inventive step (IS)	Yes:	Claims	8, 12-14, 16-18, 20, 22, 26
	No:	Claims	1-7, 9-11, 15, 19, 21, 23-25
Industrial applicability (IA)	Yes:	Claims	1-26
	No:	Claims	

2. Citations and explanations (Rule 70.7):

   see separate sheet

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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1. References

1.1 Reference is made to the following documents cited in the international search report:

D1: EP-A-0 867 400
D2: US-A-5 082 415
D3: US-A-3 809 259
D4: US 2002/085904 A1

1.2 The document D5 was not cited in the international search report but by the applicant. A copy of the document is appended hereto.

D5: US-A-4 355 940

RE Item I

2. Added Subject-Matter (Art. 34(2)(b) PCT)

2.1 In his letter of 23.09.2005 the representative claims that claim 1 has been brought in conformity with claim 25. The examiner interprets this formulation as that the amendment to claim 1 is based on claim 25.

However, the applicant has deleted the following features in claim 1:
... the loading device is provided with adjusting means for aligning an outer end in the longitudinal direction of the carrying surface.

These features have been used for formulating a new claim 2.

Moreover, the representative has not provided in his letter a basis or any reasons for this deletion in claim 1.

2.2 According to the opinion of the examiner, the deletion of these features in claim 1 is not supported by the application as originally filed and moreover the application as originally filed does not appear to disclose a loading device according to claim 2 with an auxiliary transport means and an adjusting means for alignment of an outer end of the carrying surface in the longitudinal direction.

The reasons being:
Claim 1

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P.1, li. 1-7 in combination with p. 1, li. 28 to p.2, li. 13 appears to disclose in the description the subject-matter of claim 1 as originally filed. No other place was found by the examiner (see below). According to p. 4, li. 16, 17, the loading device is further provided with an auxiliary transport means. Consequently, this does not appear to form a basis for deleting the features mentioned above, because the formulation only appears to disclose to provide additionally to said adjusting means an auxiliary transport means. P. 8, li. 14-29 appears to disclose the general combination of an auxiliary transport means and a loading device. However, the features of the loading device (frame, carrying surface ...) as specified in claim 1 do not appear to be disclosed in this context. Moreover, Figs. 9A-9E equally do not appear to disclose a loading device with an auxiliary member without the above mentioned adjusting means, because it is clearly indicated on p. 22, li. 8 that the figures are only schematic. The intend of these Figures appears to be to elucidate the functioning of the auxiliary member as claimed in claim 25 and does not appear to be directed to the loading device with a frame and the additional features. Consequently, it is not directly and unambiguously derivable that the loading device has no such adjusting means.

Claim 2

New Claim 2 now appears to specify that the carrying surface of the frame of the loading device can be aligned in the longitudinal direction (possibly to the rear edge of a mobile loading floor) and additionally the loading device comprises an auxiliary member which - implicitly disclosed - is movable in the longitudinal direction on the carrying surface. In other words, one way of interpreting this claim is that the carrying surface can be moved in the longitudinal direction to close the gap between the front edge of the carrying surface and the rear edge of the mobile loading floor so that the auxiliary member is constantly supported when moved from the carrying surface in the longitudinal direction onto the mobile loading floor.

However, such an alignment of the carrying surface relative to the mobile loading floor in combination with an auxiliary transport means appears to be disclosed in claims 1 and 12 as originally filed only in the context of coupling and disengagement, which features are not specified by claim 1 and 2 on file. The description on p. 26, li. 11-12 appears to disclose that the supporting device is translatable in the x-, y- and z-axis and that the loading device may be rotated around the longitudinal axis. It does not appear to be

directly clear, whether the x-axis corresponds to the longitudinal axis and whether translation movement capability automatically implies adjustment means to any arbitrary - as not defined - reference. For example longitudinal alignment can be performed to the front edge of the frame or the rear edge of a mobile loading floor. Consequently the combination of an auxiliary transport means and an adjustment means for aligning to any arbitrary reference in the longitudinal direction as specified by claim 2 on file does not appear to be disclosed in the originally filed documents.
Moreover the description appears to disclose an alignment of the respective longitudinal directions in the sense of axis of the carrying surface and the mobile loading floor by an alignment in the width direction (see p. 14, ll. 15-26) and it is not clear whether this is meant by claim 2.

2.3 Consequently, the International Preliminary Report on Patentability is based on claims 1 to 24 as originally filed (R.70.2(c) PCT) and claims 25 and 26 as filed with letter of 23.09.2005 (R.70.2(a) PCT).

RE Item VIII

3. Clarity

3.1 Claim 1 does not appear to be clear according to Art. 6 PCT, because alignment is alway performed between at least two entities. However, claim 1 does not appear to specify a second entity.

3.2 Claim 25 specifies that the auxiliary member comprises wheels which are bearing mounted and which wheels are connected movably to the frame.
"Bearing mounted" is interpreted simply as the fact that a shaft of the wheel is mounted in a bearing. "Connected movably to the frame" may be interpreted as well as that the wheel is free to rotate, because rotation is one form of movement. Claim 25 does not specify that the wheel is connected movably relative or vertical (see claim 14) to the frame. Claim 25 is interpreted accordingly.

3.3 It appears from the description on page 21, li 23-27, p. 23, first paragraph that the following features - content wise - are essential to the definition of the invention:
The first and second roller means may either be distanced from each other or engage with each other,

because this provides the function of being able to load a floor of a truck with the cargo being placed onto the auxiliary transport means and to retract the auxiliary transport means while unloading the auxiliary transport means onto said floor.

Since independent claim 25 does not contain these features, it does not meet the requirement following from Article 6 PCT taken in combination with Rule 5.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

3.4 Claim 8 does not meet the requirements of Article 6 PCT since the plane in which said carrying surface is supposed to rotate is not clearly defined.

3.4 It appears that the embodiment according to Figs. 10 and 11 in combination with p. 29, ll. 27-30 is not covered by claim 25, because the auxiliary transport means does not include wheels.
However, it is not indicated in the description that this embodiment is not covered by independent claim 25 (Art. 6 PCT).

RE Item IV

4. Unity

4.1 The application lacks unity a priori within the meaning of Rule 13.1 PCT for the following reasons:

4.2 The claims refer to 2 inventive concepts:
A) Loading device with adjustment means for longitudinal alignment (claims 1-24)
B) Auxiliary transport means with bearing mounted wheels connected movably to the frame (claims 25 to 26, 12-14)

4.3 No special technical feature linking the two inventions is disclosed, as they follow two different concepts. Moreover, the alleged inventions try to solve different problems (A) Avoiding a gap between the front edge of the loading device and the rear edge of the floor of the truck where a fork lift can get stuck, B) Alternative, simpler loading / unloading device).

4.4 Nevertheless in this communication both alleged inventions are examined.

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RE Item V

5. Independent claims

5.1 The present application does not appear to meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 25 does not appear to be new in the sense of Article 33(2) PCT.

5.2 Both documents D1 and D2 appear to disclose a loading device (Ladeeinrichtung zum Beladen der Ladefläche eines Lastwagens / loading apparatus for loading and unloading trucks) for transferring a cargo (Stückgut (100)/ cargo) onto a mobile loading floor (Ladefläche (60)/ cargo-stand (3)), such as for instance of a vehicle (Lastwagen (62) / truck (T)), comprising a frame (Hubtisch (66) / platform lift (1)) having a carrying surface (Plattform (12)/forks (5)) wherein the carrying surface has a longitudinal direction and wherein the frame is also provided with support means for supporting the loading device on a ground surface (see figures / base (11)), whereby the loading device is provided with adjusting means for aligning an outer end (of said vehicle) in the longitudinal direction of said carrying surface (Schienen (70), Spindelantrieb (76) / rails (29)).
All the features of claim 1 are therefore known from both documents D1 and D2.
Document D1 further discloses adjusting means comprising tilting means for tilting the carrying surface around one tilting axis (Spindelantrieb (76), Spindel (78), Schwenkzapfen (72)).

5.3 In terms of claim 25, D5 can be said to disclose all the features of claim 25 (the references in parentheses applying to this document), namely
an auxiliary transport means
for loading and unloading cargo in or from a vehicle (col. 1, li. 7-11), comprising
a frame (col. 3, li. 32) provided with
support means
for supporting a cargo placeable on the auxiliary transport means (Figs. 1, ref, 13, Fig. 6) and
moving means
for moving over a surface (Figs. 2, 3, ref. 21; col. 3, li. 57-60), wherein the auxiliary transport means
are formed by a number of second roller elements arranged at a regular mutual

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7.3 The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT (see p. 9, li. 9-23).

7.4 The application does not comply with the requirements of Article 5 PCT in combination with the PCT Guidelines 4.26 as neither the relevant matter of the cited documents introduced in the description with the phrase "incorporated herein by reference" on p. 9, li. 5-7 is expressly incorporated into the description and the phrase "incorporated herein by reference" is deleted nor is said phrase just deleted.

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Enc. with our letter of September 23, 2005

(109)

LOADING DEVICE, METHOD FOR LOADING AND AUXILIARY TRANSPORT MEANS

The invention relates to a loading device for transferring a cargo onto a mobile loading floor, such as for instance of a vehicle, comprising a frame having a carrying surface wherein the carrying surface has a longitudinal direction and wherein the frame is also provided with support means for supporting the loading device on a ground surface. The invention also relates to auxiliary transport means for transferring cargo onto a mobile loading floor, and to a method for transferring cargo.

It is known to support loads by means of a pallet, which pallet provides space for arranging forks of for instance a fork-lift truck for the purpose of lifting and displacing this load. During displacement the pallet takes up effective space which is not used by the load. The pallet must also be returned after transport.

From US-A-5.082.415 a loading device is known, which comprises the features in the preamble of independent claims 1 and 25.

The present invention has for an objective, the provision of an improved loading device and auxiliary transport means, the features of which are defined in the characterising portions of independent claims 1 and 25.

Known from US 4,355,940 is an automatic loading platform wherein use is made of a rigid frame provided with a double roller device, with which loads can be transported in and out of a loading space without support by means of a pallet.

An aspect of the present invention is to improve the

transfer of cargoes, wherein no use is made of a pallet. According to a further aspect, the object of the invention is to provide an improved method of loading and unloading a mobile loading space, such as that of a vehicle.

This aspect is, according to the invention, that the loading device is provided with adjusting means for aligning the carrying surface, such as preferably the outer end of this carrying surface, in the longitudinal direction. The carrying surface can

SEE FURTHER FROM PAGE 2, LINE 1 OF THE PRESENT APPLICATION AS ORIGINALLY FILED.

PCT/NL2004/000823

23.09.2005

Enc. with our letter of September 23, 2005

(109)

CLAIMS

1. Loading device (1) for transferring a cargo onto a mobile loading floor (32), such as for instance of a vehicle, comprising a frame (2) having a carrying surface (36) wherein the carrying surface (36) has a longitudinal direction (8) and wherein the frame (2) is also provided with support means for supporting the loading device on a ground surface, the loading device further comprising auxiliary transport means (100) for loading and unloading cargo in or from the mobile loading floor, comprising a frame (102) provided with support means (156) for supporting a cargo (152) placeable on the auxiliary transport means (100) and moving means for moving over the carrying surface, wherein the auxiliary transport means are formed by a number of second roller elements (120, 155) arranged at a regular mutual distance, characterised in that the support means comprise a number of first roller elements (101, 156) arranged at a regular mutual distance and in that the moving means further comprise a number of bearing-mounted wheels (113, 155) connected movably to the frame.

2. Loading device as claimed in claim 1, further comprising adjusting means (3-5) for aligning an outer end (35) in the longitudinal direction of the carrying surface (36).

3. Loading device as claimed in claim 1 or 2, characterized in that the adjusting means comprise tilting means for tilting the carrying surface around at least one tilting axis (26, 28).

4. Loading device as claimed in claim 3, characterized in that the tilting axis is substantially the longitudinal direction of the carrying surface.

5. Loading device as claimed in claims 3-4, characterized in that the tilting means are formed by the support means.

6. Loading device as claimed in any of the foregoing claims, characterized in that the adjusting means comprise sliding means for moving the carrying surface in a plane.

7. Loading device as claimed in claim 6, characterized in that the sliding means comprise two plates, wherein the plates engage movably on each other by means of a dovetail coupling.

8. Loading device as claimed in any of the foregoing claims, characterized in that the adjusting means are adapted for a height adjustment of the carrying surface relative to the ground surface.

9. Loading device as claimed in any of the foregoing claims, characterized in that the adjusting means are modified to rotate the carrying surface in a plane.

10. Loading device as claimed in any of the foregoing claims, characterized in that the adjusting means are adapted to hold the carrying surface substantially horizontal.

11. Loading device as claimed in any of the foregoing claims, characterized in that the adjusting means comprise a cylinder as driving means for the adjustment.

12. Loading device as claimed in any of the foregoing claims, characterized in that in a first mode the first roller elements are coupled to the moving means and in a second mode the first roller elements are disengaged.

13. Loading device as claimed in claim 12, characterized in that in the first mode the first roller elements engage on the second roller elements, and in a second mode the second

roller elements are disengaged from the first roller elements.

14. Loading device as claimed in claim 12 or 13, characterized in that the moving means comprise a number of wheels which are bearing-mounted for substantially vertical movement on the auxiliary transport means.

15. Loading device as claimed in any of the foregoing claims, characterized in that the loading device comprises coupling means for coupling the loading device to the mobile loading floor.

16. Loading device as claimed in any of the foregoing claims, characterized in that the loading device is provided with detecting means for detecting the surface of the mobile loading floor and with a control device coupled to the detecting means and the adjusting means, wherein the control device is adapted to control the adjusting means such that the carrying surface is aligned with the detected surface.

17. Loading device as claimed in claim 16, characterized in that the control device is adapted to continuously compare the surface alignment.

18. Loading device as claimed in any of the foregoing claims, characterized in that the loading device is provided with a positioning part, wherein the positioning part comprises load support means formed by at least a first sub-frame provided with a number of rollers oriented in a first direction, and a second sub-frame provided with a number of rollers oriented in a second direction, wherein the sub-frames are connected movably to the frame of the loading device.

19. Loading device as claimed in any of the foregoing claims, characterized in that the loading device is provided with at least one guide oriented substantially parallel to the longitudinal direction.

20. Loading device as claimed in claim 19, characterized in that the guide is a gear rack.

21. Loading device as claimed in claim 19 or 20, characterized in that the loading device comprises load displacing means which are displaceable along the carrying surface while engaging on the guide.

22. Loading device as claimed in claim 21, characterized in that the load displacing means comprise a pivoting pusher.

23. Loading device as claimed in any of the claims 19-22, to the extent dependent on claims 11-14, characterized in that the drive means engage on the guide such that the auxiliary transport means is displaceable along the guide.

24. Loading device as claimed in claim 23, characterized in that the guide is connected to the auxiliary transport means.

25. Auxiliary transport means (100) for loading and unloading cargo in or from a vehicle, comprising a frame (102) provided with support means (156) for supporting a cargo (152) placeable on the auxiliary transport means (100) and moving means for moving over a surface, wherein the auxiliary transport means are formed by a number of second roller elements (120, 155) arranged at a regular mutual distance, characterised in that the support means comprise a number of first roller elements (101, 156) arranged at a regular mutual distance and in that the moving means further comprise a number of bearing-mounted wheels (113, 155) connected movably to the frame.

26. Auxiliary transport means as claimed in claim 25, characterized in that the auxiliary transport means (100) has a first mode wherein the first roller elements (101, 156) are coupled to the moving means, and a second mode wherein the first roller elements (101, 156) are disengaged from the moving means.